

ER Site No. 28: Mine Shafts

ADS: 1332

Operable Unit: Foothills Test Area

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|--|---|
| Site History | 1 |
| Constituents of Concern..... | 1 |
| Current Hazards | 1 |
| Current Status of Work | 2 |
| Future Work Planned | 2 |
| Waste Volume Estimated/Generated | 2 |

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Site History

There are ten mine shafts (ER Site 28-1 through 28-10) located throughout the Withdrawn Area. The mines were placed on the permit based solely on an interviewee who had heard a rumor that the mine shafts were used as the disposal sites for low-level radioactive wastes and explosive ordnance. Except for Mine 28-2, no evidence to support this rumor was found during the RFI investigation. Some of the mines are open pits and some are shafts that appear to be partially collapsed.

Constituents of Concern

It was speculated that low level radioactive wastes were disposed in the mines, but no radiation anomalies were found during a radiation survey conducted in the mine shafts in 1982 by the SNL RPO (formerly Health Physics). More recent safety surveys of mine 28-1, 28-3, 28-6, and 28-10 found no elevated radiation. The inside of Mine 28-2 was sampled and found to contain soils with metals and radionuclide at background levels, and very low levels of high explosives. In November 2001, elevated radioactivity was found at the opening of Mine 28-2. A sample was collected at the mine opening, and analyzed for radionuclides by gamma spectroscopy. The analytical result from this sample was 25,000 pCi/gram U-238 and the U-235 was 383 pCi/gram, and it was determined that the material is depleted uranium. UXO was found around but not in the mines during a unexploded ordnance (UXO) survey conducted by the KAFB Explosive Ordnance Division (EOD).

Current Hazards

Sites 28-1, -3, -4, -5, -6, -7, -8, -9 and -10 have been accepted for NFA. There are no current hazards at these sites related to contamination of the surface or subsurface soils. Mine 28-2 has the minerals expected in this type of mine and very low levels of explosives in the sediment inside the mine, however this mine is structurally unsafe and should not be entered. In addition,

elevated radioactivity was found just outside of the Mine 28-2 opening. There may be structures or stored materials that remain at the site that are a potential hazard.

Current Status of Work

An administrative No Further Action (NFA) has been proposed to the U.S. Environmental Protection Agency (EPA). Nine of the 10 mines have been approved by the New Mexico Environmental Department (NMED) for [NFA](#) and a Class 3 Permit Modification has been completed to remove these sites from the Hazardous and Solid Waste Amendments (HSWA) permit. NMED indicated that Site 28-10 is appropriate for NFA petition on April 12, 2001. No further sampling activities will be conducted at the mine sites which have been accepted for NFA. The mine shafts have been either plugged or fenced to prevent accidents. Of these, three were shallow pits which have been backfilled to mitigate a vertical fall hazard. A fence was installed around Mine 28-4 to address the fall hazard. Mine 28-10 was inspected then backfilled with NMED approval. A wire cable net was installed over the opening at Mine 28-1 to provide fall protection and maintain the mine as bat habitat. ER Site 28-2 remains on the HSWA permit. Supplemental information on the mines and the results of the Mine 28-2 entry and sampling have been submitted to NMED. The outside area of Mine 28-2 has been characterized and remediated.

Future Work Planned

ER Site 28-2 remains on the HSWA permit. SNL awaits NMED's decision regarding the supplemental information and the results of the Mine 28-2 entry and sampling which have been submitted to NMED.

Waste Volume Estimated/Generated

Five gallons of slag containing elevated lead was removed from Mine 28-10. Eighteen drums of contaminated soils were removed from the outside area of Mine 28-2.

Information for ER Site 28 was last updated Jan 29, 2003.